

What is claimed is:

1. A semiconductor integrated circuit device having a first MIS transistor of a first conductivity type, a second MIS transistor of a second conductivity type, and a resistor connected in series between a first power-source line and a second power-source line, comprising:

a third MIS transistor of the first conductivity type having a gate connected to a node where said first MIS transistor and said second MIS transistor are connected together, and a drain connected to a connection node where said second MIS transistor and said resistor are connected together.

2. The semiconductor integrated circuit device as claimed in claim 1, further comprising:

fourth and fifth MIS transistors of the second conductivity type current mirror-connected to said second MIS transistor;

a sixth MIS transistor of the first conductivity type connected between said fourth transistor and to said first power-source line, and is current mirror-connected to said first MIS transistor; and

a seventh MIS transistor of the first conductivity type connected between said fifth MIS transistor and to said first power-source line, and a gate of said seventh MIS transistor being connected to a node where said first MIS transistor and said second MIS transistor are connected together.

3. The semiconductor integrated circuit device as claimed in claim 1, further comprising:

an eighth MIS transistor of the first conductivity type having a source connected to said first power-source line, and a gate connected to a node where said first MIS transistor and second MIS transistor are connected together, in order to produce an output current.

4. The semiconductor integrated circuit device as claimed in claim 1, further comprising:

a ninth MIS transistor of the second conductivity type connected between said second MIS transistor and said resistor; and

tenth and eleventh MIS transistors of the second conductivity type connected between said second power-source line and said fourth and fifth MIS transistors, wherein said ninth, tenth and eleventh MIS transistors are connected to said second, fourth and fifth MIS transistors in cascade.

5. The semiconductor integrated circuit device as claimed in claim 1, wherein said first MIS transistor has characteristics different from those of other MIS transistors of the first conductivity type.

6. The semiconductor integrated circuit device as claimed in claim 5, wherein said first MIS transistor having different characteristics is of a size smaller than those of said other MIS transistors of the first conductivity type.

7. The semiconductor integrated circuit device as claimed in claim 5, wherein said first MIS transistor having different characteristics is of a threshold voltage higher than those of said other MIS transistors of the first conductivity type.

8. The semiconductor integrated circuit device as claimed in claim 5, wherein said first MIS transistor having different characteristics gives a substrate bias larger than those of said other MIS transistors of the first conductivity type.

9. A semiconductor integrated circuit device having an amplifier unit which receives input signals and is constituted by high-voltage MIS transistors of a first conductivity type and a second conductivity type, and a level-shifting unit which receives the output from said amplifier unit and produces a signal of a level that is shifted, wherein:

said amplifier unit comprises diode-connected high-voltage MIS transistors of the second conductivity type; and

5 said level-shifting unit comprises high-voltage MIS transistors of the second conductivity type current mirror-connected to said diode-connected high-voltage MIS transistors of the second conductivity type, as well as low-voltage MIS transistors of the first conductivity type and of the second conductivity type.

10 10. The semiconductor integrated circuit device as claimed in claim 9, wherein said diode-connected high-voltage MIS transistors of the second conductivity type are replaced by resistors.

15 11. The semiconductor integrated circuit device as claimed in claim 9, wherein said high-voltage MIS transistors of the second conductivity type are connected in a crossing manner to said diode-connected high-voltage MIS transistors of the second conductivity type.

20 12. The semiconductor integrated circuit device as claimed in claim 9, wherein said amplifier unit comprises a pair of high-voltage MIS transistors of the first conductivity type for receiving differential input signals.

25 13. The semiconductor integrated circuit device as claimed in claim 12, wherein said amplifier unit further comprises a pair of high-voltage MIS transistors of the first conductivity type having cross-connected drains, for said pair of high-voltage MIS transistors of the first conductivity type to receive said input signals.

30 14. The semiconductor integrated circuit device as claimed in claim 9, wherein said amplifier unit comprises:

35 a first differential pair of high-voltage MIS transistors of a first conductivity type for receiving differential input signals; and

 a second differential pair of high-voltage MIS transistors of a second conductivity type for

receiving said differential input signals.

15. A semiconductor integrated circuit device having a current-source circuit, and a differential amplifier circuit, an output current of said current-source circuit through a current mirror circuit being a
5 bias voltage of a current source in said differential amplifier circuit, wherein:

said current-source circuit comprises a first MIS transistor of a first conductivity type; a
10 second MIS transistor of a second conductivity type; a resistor connected in series between a first power-source line and a second power-source line; and a third MIS transistor of the first conductivity type having a gate connected to a node where said first MIS transistor and
15 said second MIS transistor are connected together, and a drain connected to a connection node where said second MIS transistor and said resistor are connected together; and

said differential amplifier circuit having
20 an amplifier unit which receives input signals and is constituted by high-voltage MIS transistors of a first conductivity type and a second conductivity type, and a level-shifting unit which receives the output from said amplifier unit and produces a signal of a level that is
25 shifted, wherein:

said amplifier unit comprises diode-connected high-voltage MIS transistors of the second conductivity type; and

said level-shifting unit comprises high-voltage MIS transistors of the second conductivity type
30 current mirror-connected to said diode-connected high-voltage MIS transistors of the second conductivity type, as well as low-voltage MIS transistors of the first conductivity type and of the second conductivity type.

35 16. The semiconductor integrated circuit device as claimed in claim 15, wherein said current-source circuit further comprises:

fourth and fifth MIS transistors of the second conductivity type current mirror-connected to said second MIS transistor;

5 a sixth MIS transistor of the first conductivity type connected between said fourth transistor and to said first power-source line, and is current mirror-connected to said first MIS transistor; and

10 a seventh MIS transistor of the first conductivity type connected between said fifth MIS transistor and to said first power-source line, and a gate of said seventh MIS transistor being connected to a node where said first MIS transistor and said second MIS transistor are connected together.

15 17. The semiconductor integrated circuit device as claimed in claim 15, wherein said current-source circuit further comprises an eighth MIS transistor of the first conductivity type having a source connected to said first power-source line, and a gate connected to a node where
20 said first MIS transistor and second MIS transistor are connected together, in order to produce an output current.

25 18. The semiconductor integrated circuit device as claimed in claim 15, wherein said current-source circuit further comprises:

a ninth MIS transistor of the second conductivity type connected between said second MIS transistor and said resistor; and

30 tenth and eleventh MIS transistors of the second conductivity type connected between said second power-source line and said fourth and fifth MIS transistors, wherein said ninth, tenth and eleventh MIS transistors are connected to said second, fourth and fifth MIS transistors in cascade.

35 19. The semiconductor integrated circuit device as claimed in claim 15, wherein said first MIS transistor has characteristics different from those of other MIS

transistors of the first conductivity type.

20. The semiconductor integrated circuit device as claimed in claim 19, wherein said first MIS transistor having different characteristics is of a size smaller than those of said other MIS transistors of the first conductivity type.

21. The semiconductor integrated circuit device as claimed in claim 19, wherein said first MIS transistor having different characteristics is of a threshold voltage higher than those of said other MIS transistors of the first conductivity type.

22. The semiconductor integrated circuit device as claimed in claim 19, wherein said first MIS transistor having different characteristics gives a substrate bias larger than those of said other MIS transistors of the first conductivity type.

23. The semiconductor integrated circuit device as claimed in claim 15, wherein said diode-connected high-voltage MIS transistors of the second conductivity type are replaced by resistors.

24. The semiconductor integrated circuit device as claimed in claim 15, wherein said high-voltage MIS transistors of the second conductivity type are connected in a crossing manner to said diode-connected high-voltage MIS transistors of the second conductivity type.

25. The semiconductor integrated circuit device as claimed in claim 15, wherein said amplifier unit comprises a pair of high-voltage MIS transistors of the first conductivity type for receiving differential input signals.

26. The semiconductor integrated circuit device as claimed in claim 25, wherein said amplifier unit further comprises a pair of high-voltage MIS transistors of the first conductivity type having cross-connected drains, for said pair of high-voltage MIS transistors of the first conductivity type to receive said input signals.

27. The semiconductor integrated circuit device as

claimed in claim 15, wherein said amplifier unit comprises:

5 a first differential pair of high-voltage
MIS transistors of a first conductivity type for
receiving differential input signals; and

 a second differential pair of high-voltage
MIS transistors of a second conductivity type for
receiving said differential input signals.